

NCR 12-1914

Work Order ID 87219

87219

Page 1

July-11-12 10:34:04 AM

Item ID: D350-748-201

Accept

N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Crosstube Installation, High Aft

Start Date: 7/10/12 Start Qty: 1.00 *1*

Cust Item ID:

Required Date: 8/31/12 Req'd Qty: 1.00 *1*

Customer:

Reference:

Approvals: Process Plan: 

Date: 12-07-12 Tooling:

Date:

Run Start *NR1*

QC:

Date: SPC (Y/N):

Date:

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr

Revision Nbr

D350-748-241

F

100

0.00

100

DOCUMENT CONTROL

DC

Memo

Document Control

Photocopy bluefile & type labels per PPPD350-748-201 CHG002

SCRAP

110

0.00

110

BENDING MACHINE - CROSSTUBES

CNC Bend 2

Memo

CNC Alpha 160 Bender

Bend tube as per Dwg D350-748-241 using CNC bender program D350A and

Folio FT

*****UNDER BEND .225" PER SIDE*****

7to →

120

QC15- Crosstube Dimensional Check

0.00

120

QC

Memo

Quality Control

0.00

Dart Aerospace Ltd

W/O: 87219		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
		See Pink 12-19/14.					

Part No: D350-748-201 PAR #: _____ Fault Category: Landing Gear / x tubes NCR: Yes No DQA: [Signature] Date: 12/10/22

Resolution: SCRAP Disposition: SCRAP QA: N/C Closed: _____ Date: _____

NCR: 12-1926		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
12/10/11	✓	tube kinks in bending RAD with bending R.C. Press. / material not straight when return back from Heat treat	[Signature] 12/10/11 PS1042	- SCRAP + Destn No Replce.	[Signature] 12-10-15	MO 12/10/15	[Signature] 12/10/11 PS1042	(DAS 16) 17/01/15
		Suppliers METLAB		\$ 3021.82				

NOTE: Date & initial all entries

July-11-12 10:34:04 AM

Item ID: D350-748-201

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N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Crosstube Installation, High Aft

Start Date: 7/10/12 **Start Qty:** 1.00 ***1***

Cust Item ID:

Required Date: 8/31/12 **Req'd Qty:** 1.00 ***1***

Customer:

Reference:

Run Start *NR1*

Approvals: _____ **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

Stop *NR2*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

125

0.00

125

0.00

HandFXtube

Memo

Hand Finishing Crosstubes



Stress relief

Heat treat crosstube as per QSI010 4.3

Temp: _____

Start time: _____

Finish time:

127

QC5- Inspect part completeness to step on W/O

0.00

127

0.00

QC

Memo

Quality Control

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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NOTE: Date & initial all entries

Work Order ID 87219***87219***

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July-11-12 10:34:04 AM

Item ID: D350-748-201

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Crosstube Installation, High Aft

Start Date: 7/10/12 Start Qty: 1.00

1

Cust Item ID:

Required Date: 8/31/12 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run Start

NR1

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

130

0.00

130

Crosstubes

Crosstubes

Memo

0.00

Crosstubes

1-Drill Tube as per Dwg D350-748-241 Using DT8876 Drill Jigs,
Set-up drill table as per QSI 010

2-Deburr

3-Engrave Part # and Batch # as per Dwg D350-748-241

4-Remove all marks from tube within limits of D350-748-241

5- Apply a light coat of LPS3 on the interior of tube
Batch: _____

140

QC6- Inspect dimensions to drawing

0.00

140

QC

Memo

0.00

Quality Control

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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NOTE: Date & initial all entries

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
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Item ID: D350-748-201

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N900040100

Setup Start ***NS1***

Revision ID:

Stop *NS2*

Item Name: Crosstube Installation, High Aft

Start Date: 7/10/12 **Start Qty:** 1.00 ***1***

Cust Item ID:

Required Date: 8/31/12 Req'd Qty: 1.00 * 1 *

Customer:

Reference:

Run Start *NR1*

Approvals: _____ **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

Stop ***NR2***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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180

0.00

180

SprayPaint

0.00

SprayPaint

Memo

Spray Painting

1-Prime inside crosstube as per QSI 005 4.2
2-Paint Outside of Tube as per Dart QSI 005 4.2

190

QC14- Inspect Spray Paint

0.00

190

QC

Memo

0.00

Quality Control

Then, Wrap in plastic bag to protect from scratches

200

0.00

200

Crosstubes

0.00

Crosstubes

Memo

Crosstubes

- 1-Install Ground wire Insert, then insert screw and washer
- 2-Install Abrasion strips as per Dwg D350-748-241 & QSI 035.
- 3-Install supports Using Dt8876 as per Dwg D350-748-241, Torque to 60-80 IN-LBS

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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Item ID: D350-748-201

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N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Crosstube Installation, High Aft

Start Date: 7/10/12 **Start Qty:** 1.00 ***1***

Cust Item ID:

Required Date: 8/31/12 Req'd Qty: 1.00 * 1 *

Customer:

Reference:

Run Start *NR1*

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

Stop ***NR2***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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210

QC5- Inspect part completeness to step on W/O

0.00

210

QC

Memo

0.00

Quality Control

220

Pick Kit

0.00

220

Packaging

Memo

0.00

Packaging

230

QC4- 100% Inspect kits for completeness

0.00

230

QC

Memo

0.00

Quality Control

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 87219

87219

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Item ID: D350-748-201 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Crosstube Installation, High Aft
 Start Date: 7/10/12 Start Qty: 1.00 ***1*** Cust Item ID:
 Required Date: 8/31/12 Req'd Qty: 1.00 ***1*** Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
240		0.00							
240	Packaging								
Packaging	Memo	0.00							
Packaging	Identify and pack for shipping as per PPPD350-748-201 Location: _____ PPP Rev: _____								
250	QC21- Final Inspection - Work Order Release	0.00							
250									
QC	Memo	0.00							
Quality Control									

MF
12-10-15

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Page 1

Work Order ID: 87219

Parent Item: D350-748-201

Start Date: 7/10/12

Required Date: 8/31/12

Parent Item Name: Crosstube Installation, High Aft

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev: A New Issue 06-07-05 JLM
 IPP Rev: B Update qty of MS21042L5 06-09-12 KJ
 IPP Rev C Combined manufacturing 08.04.02 EC verified by: DD
 IPP Rev:D 08-06-24 revD as per dwg DD verified by:EC
 IPP Rev: E 08.12.11 Step17 was step 21 KJ Verified by:EC IPP Rev:F 10.08.04 added QSI010
 4.3 DD verf:EC IPP REV:G ADD UNDER BEND COMMENT 12-05-28 JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
ALS4-1032-225 Insert		Purchased	No			200	Each	2,664.0000	1	1			
				<u>Location</u>		<u>Loc Qty</u>							
				FP-B		2221							
				122290		2221							
				ST281		420							
				108696		146							
				110768		62							
				118386		55							
				118966		68							
				121269		89							
				ST282		23							
				120410		10							
				120451		13							
AN4-41A Bolt		Purchased	No			220	Each	411.0000	8	8			
				<u>Location</u>		<u>Loc Qty</u>							
				360		181							
				121185		181							
				ST360		230							
				115108		3							
				115705		1							
				118838		8							
				119328		68							
				120423		150							

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Page 2

Work Order ID: 87219

Parent Item: D350-748-201

Start Date: 7/10/12

Required Date: 8/31/12

Parent Item Name: Crosstube Installation, High Aft

Start Qty: 1.00

Required Qty: 1.00

AN4-6A		Purchased	No	220	Each	1,363.0000	16	16
Bolt								
				<u>Location</u>		<u>Loc Qty</u>	<u>Loc Code</u>	
				ST356		1363		
				119017		363		
				121243		500		
				122151		500		
AN5-32A		Purchased	No	220	Each	277.0000	4	4
Bolt								
				<u>Location</u>		<u>Loc Qty</u>	<u>Loc Code</u>	
				ST339		177		
				119862		2		
				120423		75		
				122151		100		
				ST340		100		
				121541		100		
AN960JD10	NAS1149D0363J	Purchased	No	200	Each	0.0000	1	1
Washer								
AN960JD416	NAS1149D0463J	Purchased	No	220	Each	29.0000	32	32
Washer								
				<u>Location</u>		<u>Loc Qty</u>	<u>Loc Code</u>	
				ST351		29		
				116289		8		
				119097		21		
AN960JD516	NAS1149D0563J	Purchased	No	220	Each	12.0000	8	8
Washer								
				<u>Location</u>		<u>Loc Qty</u>	<u>Loc Code</u>	
				ST338		12		
				2612		12		

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Shop Packet Print

Page 2

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Page 3

Work Order ID: 87219

Parent Item: D350-748-201

Start Date: 7/10/12

Required Date: 8/31/12

Parent Item Name: Crosstube Installation, High Aft

Start Qty: 1.00

Required Qty: 1.00

D2856-400 Manufactured No 200 f 144.8425 1.181 1.2431579
Abrasion Strip

Location	Loc Qty	Loc Code
ST403	135.398	
81875	135.398	
ST409	9.4445	
63735	0.6696	
68076	0.3149	
71164	8.46	

D3500-1 Manufactured No 220 Each 51.0000 4 4
Saddle

Location	Loc Qty	Loc Code
ST423	40	
85421	40	
ST425	11	
76940	11	

D3501-1 Manufactured No 220 Each 232.0000 16 16
Bushing

Location	Loc Qty	Loc Code
ST051	232	
67757	4	
73391	6	
74866	206	
85414	16	

D3502-1 Manufactured No 200 Each 47.0000 2 2
Support

Location	Loc Qty	Loc Code
LG050	37	
77041	37	
ST051	10	
73419	9	
74873	1	

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

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Picklist Print

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Work Order ID: 87219

Parent Item: D350-748-201

Parent Item Name: Crosstube Installation, High Aft

D350-748-241TRN

Crosstube Turning Detail

Manufactured No

*Pink NUT 12-1914
not sandblasted*

Start Date: 7/10/12

Start Qty: 1.00

Required Date: 8/31/12

Required Qty: 1.00

110 Each 2.0000 1 1

Location	Loc Qty	Loc Code
BSKT	-1	
LG 84667	3	
61314	0	
61315	0	
79392	1	
83287	1	

①

MO 12/10/01

MS21042L4

Nut

Purchased No

220 Each 1,124.0000 24 24

Location	Loc Qty	Loc Code
ST300	1124	
119075	116	
121011	193	
121444	686	
121652	129	

MS21042L5

Nut

Purchased No

220 Each 1,166.0000 4 4

Location	Loc Qty	Loc Code
300	500	
121652	500	
ST300	666	
108827	4	
116105	5	
116548	43	
119109	602	
17651	4	
2937	8	

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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Work Order ID: 87219

Parent Item: D350-748-201

Start Date: 7/10/12

Required Date: 8/31/12

Parent Item Name: Crosstube Installation, High Aft

Start Qty: 1.00

Required Qty: 1.00

MS21920-20 Purchased No

200 Each 127.0000 2 2

Clamp (per MIL-DTL-8783C)

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
LG050	127	
116799	8	
120676	8	
121067	2	
121274	34	
122254	75	

MS27039-1-10 Purchased No

200 Each 141.0000 1 1

Screw

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
GA	100	
120449	100	
ST291	5	
120120	5	
ST308	36	
122027	36	

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

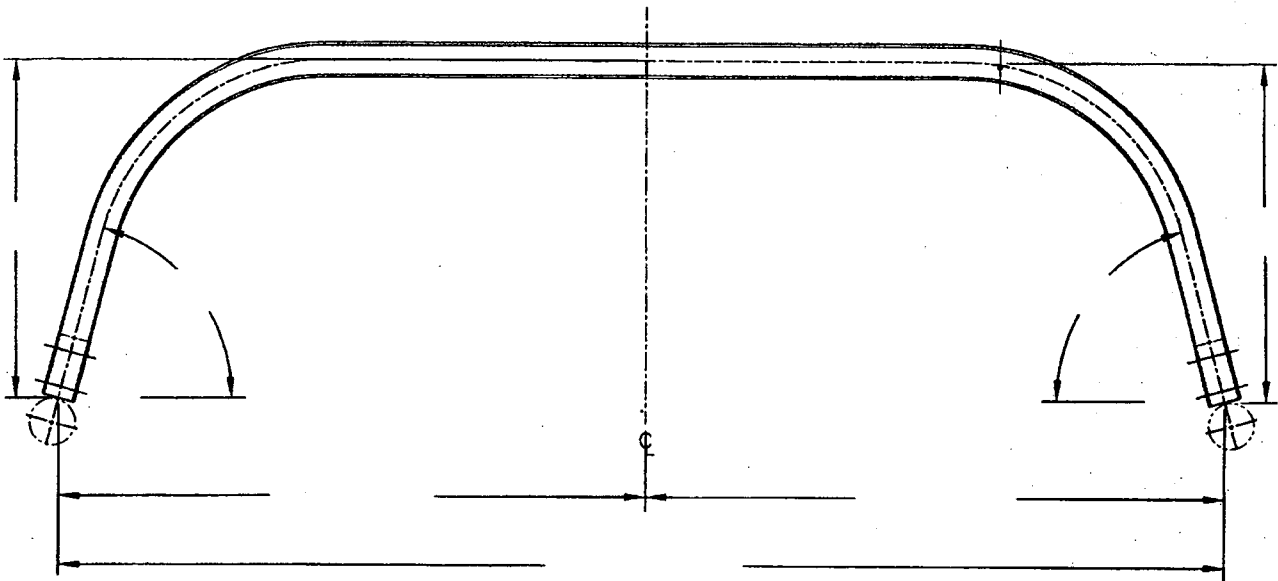
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD		Work Order:	87219
Description: Crosstube High Aft (AS350/355)		Part Number:	D350-748-201
Inspection Dwg: D350-748-241	Rev: E <i>FEA</i>		Page 1 of 1

Required Dimension	Min	Max
Height	31.22	31.48
1/2 Span	40.77	41.03
Angle	75	77
Total Span	81.54	82.06
Bending Passes	7	--
Crushing	--	6%
Twist	--	0.25



	Side A	Side B
Bending Passes		
Crushing		
Comments		

QC15 Inspection	
Date	

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM	
B	10.08.23	Dwg Rev updated	KJ	
C	12.04.16	Added bending, crushing & twist dimensions	KJ <i>[Signature]</i>	<i>[Signature]</i>

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

Work Order: _____ Part No. _____ NCR No. _____				DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>		AGAINST DEPARTMENT/PROCESS <div style="display: flex; justify-content: space-between;"> <div> Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/> </div> <div> Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/> </div> <div> Water Jet <input type="checkbox"/> Prod. Eng. Coord. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/> </div> <div> Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/> </div> </div>					
Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector		
Doc/Data <input type="checkbox"/>											
Equip/Tooling <input type="checkbox"/>											
Operator <input type="checkbox"/>											
Material <input type="checkbox"/>											
Setup <input type="checkbox"/>											
Other <input type="checkbox"/>											
Process <input type="checkbox"/>											
Supplier <input type="checkbox"/>											
Training <input type="checkbox"/>											
Unapproved <input type="checkbox"/>											

FAULT CATEGORY				
Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped. <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio	<input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions	<input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other	

Item	Qty -241	Part Number	Description
1	X	D350-748-241	CROSSTUBE ASSEMBLY (AS 350/355 HI AFT)
2	1	D6015-125	CROSSTUBE (OR D6018-125)
3	2	D3502-1	SUPPORT
4	2	D2856-400-710	ABRASION STRIP
5	1	AEIS-1032-225	INSERT
6	1	NAS1149D0363J	WASHER (OR AN960JD10)
7	2	MS21920-20	CLAMP (PER DART SPEC. M-MS21920-20)
8	1	MS27039-1-10	SCREW

GENERAL NOTES:

- 1) MATERIAL: MANUFACTURED FROM D6015-125 OR D6018-125
FINISHED LENGTH = 122.700±0.06
- 2) FINISH: MAGNETIC PARTICLE INSPECT PER DART QSI 038 4.2
CADMIUM PLATE PER AMS-QQ-P-416B, CLASS 1, TYPE II
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: DART PART NUMBER "D350-748-241" AND BATCH NUMBER ON INSIDE OF CUFF
PER DART QSI 044 6.4 (VIBRATING STYLUS)
- 7) WEIGHT: 29.85 lbs
- 8) PART IS SYMMETRIC ABOUT CENTERLINE, EXCEPT FOR Ø0.297 HOLE.
- 9) RUN CUTTER OFF PART WHERE INDICATED. BLEND OUT ALL EDGES FROM MACHINING
LONGITUDINALLY, TRANSITION SHOULD BE SMOOTH. NOTE: ALL HOLES ARE DRILLED AFTER
BENDING.
- 10) BEND PROGRESSIVELY WITH A MINIMUM OF 7 PASSES. MAXIMUM TUBE FLATTENING DUE TO
BENDING IS 6% BASED ON O.D.
- 11) HEAT TREAT TO MIN. 180 KSI PER MIL-T-6736 OR AMS 2759-1C AFTER TURNING. ACCEPTABLE TO
VERIFY TENSILE STRENGTH BY HARDNESS TEST PER ASTM E18 TO 40-45 HRC.
- 12) INSTALL D2856-400-710 ABRASION STRIPS WITH A GAP ON BOTTOM SIDE OF CROSSTUBE,
CENTERED OPPOSITE D3502-1 SUPPORT, PER QSI 035.
- 13) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE
OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES,
NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY.
CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE. WHEN DRILLING HOLES EXTREME CARE
MUST BE TAKEN AND CAREFUL DEBURRING PERFORMED TO ENSURE A CLEAN HOLE WITH NO
CRACKING/CHIPPING/GROOVES.
- 14) TORQUE CLAMPS 60 TO 80 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT
NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.
- 15) MAX TWIST AFTER BENDING: WITH XTUBE LAYED FLAT ON SURFACE, THE DIFFERENCE BETWEEN
CUFF HEIGHTS FROM THE SURFACE MAY BE NO LARGER THAN 0.25 (ZN C1-3).

RELEASED
2011-01-08

F	ADD HRC TEST OPTION (B8-1) PER PAR 09-040, ADD TWIST LIMIT (A8-1, C1-3), ADD D6015-125 OPTION (C8-1), STOCK DIM NOW MACHINED (D1-4)	CP	10.11.23
E	REVISE GENERAL NOTES; UPDATE TO CURRENT STANDARDS; RELOCATED FLAG #6 PER PAR 08-046 (ZN A8-3); ADD TOLERANCES (ZN C6-3, D2-3)	RF	09.09.30
D	MAG. PARTICLE AND CAD PLATE AS MFD.	CP	06.10.31
C	ADD CAD PLATING	CP	06.08.14
B	ADD D6018-125 & PRIME AND PAINT	CP	06.06.30
A	NEW ISSUE	CP	06.03.31
REV.	DESCRIPTION	BY	DATE
DESIGN	DP	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	DP		
CHECKED	DP	DRAWING NO.	REV. F
MFG. APPR.	DP	D350-748-241	SHEET 1 OF 4
APPROVED	DP	TITLE	SCALE
DE APPR.	DP	CROSSTUBE (AS 350/355 HI AFT)	NTS
DATE	10.11.23	COPYRIGHT © 2006 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE, OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

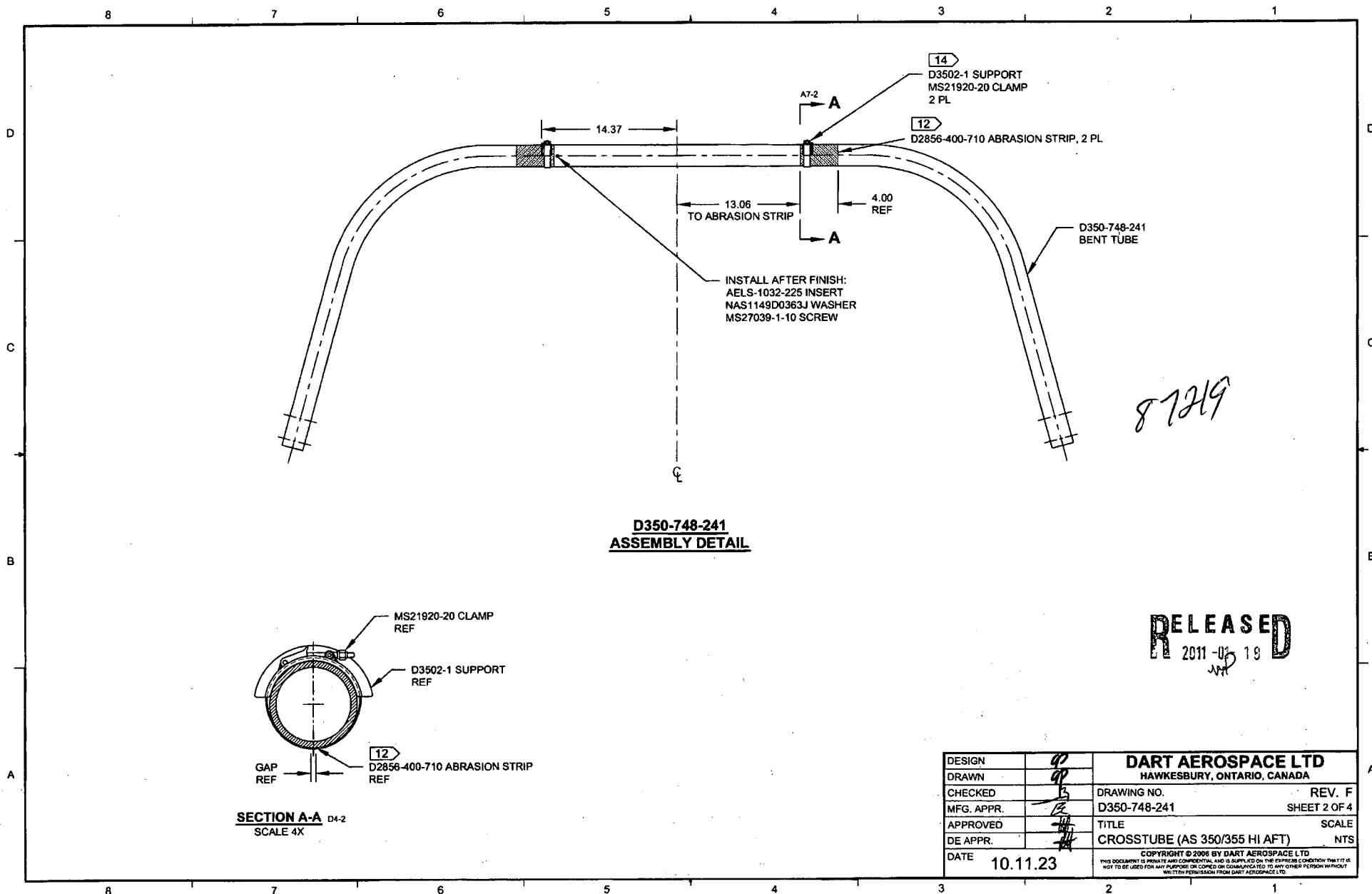
NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

Work Order: _____ Part No. _____ NCR No. _____				DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>		AGAINST DEPARTMENT/PROCESS <div style="display: flex; justify-content: space-between;"> <div> Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/> </div> <div> Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/> </div> <div> Water Jet <input type="checkbox"/> Prod. Eng. Coord. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/> </div> <div> Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/> </div> </div>						
Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector			
Doc/Data <input type="checkbox"/>												
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RELEASED
2011-03-19
JHR

DESIGN	92	DART AEROSPACE LTD	
DRAWN	92	HAWKESBURY, ONTARIO, CANADA	
CHECKED	13	DRAWING NO.	REV. F
MFG. APPR.	13	D350-748-241	SHEET 2 OF 4
APPROVED	13	TITLE	SCALE
DE APPR.	13	CROSSTUBE (AS 350/355 HI AFT)	NTS
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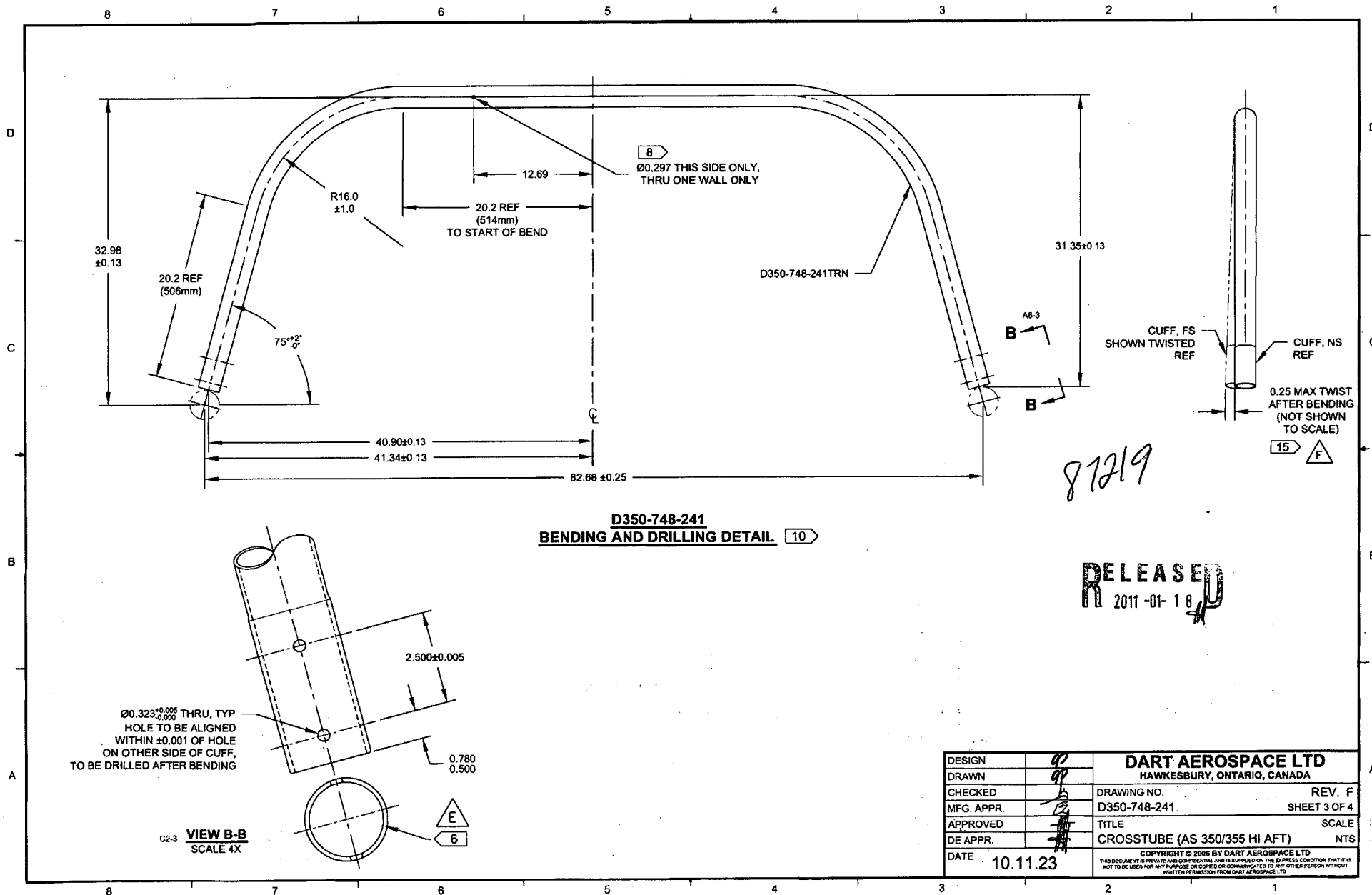
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MFG. APPR.		D350-748-241	SHEET 3 OF 4
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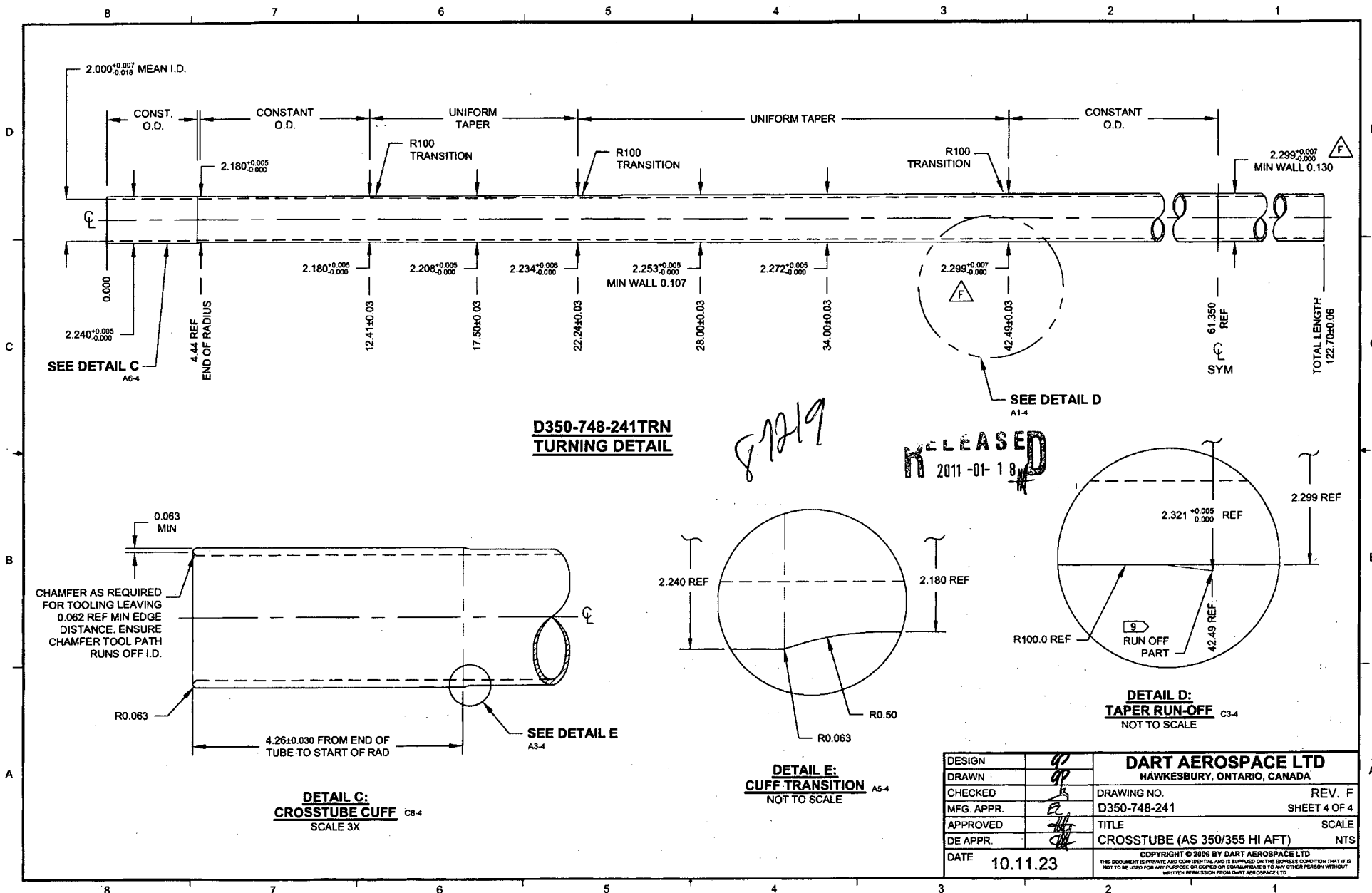
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